The joint evolution of Nursing and Artificial Intelligence: Safety and optimization in the Nursing Process

Evolução da Enfermagem e Inteligência Artificial: Segurança e Otimização no Processo de Enfermagem

Evolución de Enfermería e Inteligencia Artificial: Seguridad y Optimización en el Proceso de Enfermería

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EDITORIAL

The adoption of Artificial Intelligence (AI) in Nursing is no longer a mere possibility and already manifests itself in the routine of various health services. Its scope encompasses from automated analysis of medical records to algorithms capable of foreseeing complications at a large scale.

Each of the Nursing Process phases (Assessment, Diagnosis, Planning, Implementation and Evaluation) finds in AI a number of resources to expand patient safety and improve efficiency in the teams. However, the objective is not to substitute nurses' expertise but, on the contrary, to optimize repetitive tasks through AI, freeing time for advanced clinical reasoning, people-centered care and rational resource management.

As for the Assessment phase, studies such as the one by Rossetti *et al*.[1] show that a real-time analysis of Nursing records through "deep learning" issues precise alerts about imminent clinical deterioration.

This anticipation of risks enables earlier interventions and avoiding problems, thus improving care safety in a tangible way. In the Diagnosis phase, Natural Language Processing (NLP) algorithms can identify patterns linked to falls, infections and other threats[2].

Extracted from clinical and laboratory data, these correlations enrich professional judgment, but they cannot substitute it. The final decision remains a human and ethical action, essential to respect each patient's singularity.

In turn, in the Planning phase Padula *et al*.[3] show that AI-guided support systems customize interventions for pressure injuries, reducing bureaucratic tasks and driving health education. When speaking about Implementation, predictive algorithms identify potential rehospitalizations and possible waste of resources. For Marafino *et al*.[4], early notification to health teams stimulates early monitoring, ensuring care continuity and strengthening assistance-related safety. Finally, in the Evaluation phase a number of automated reports compile quality indicators such as healing, users' satisfaction and rehospitalization rates[5].

This immediate feedback favors constant adjustments, raising the bar in the services and strengthening the continuous improvement culture.

Despite such benefits, training and cultural obstacles still prevail.

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Many nurses lack access to periodic updates about the Nursing Process, and AI can bridge this gap by means of online training sessions and interactive learning tools. However, the adoption of innovations finds resistance in institutions with fixed routines or that are unaware about the efficiency and safety gains. Both demonstrating practical results and raising awareness about the positive impact on care quality are fundamental to overcome barriers.

In Nursing management, AI organizes work schedules, prioritizes actions and optimizes supplies, ensuring higher financial sustainability in the services and freeing professionals for more complex care measures.

Nevertheless, no technological resource substitutes nurses' discernment and accountability. It is up to these professionals to critically analyze AI-generated data and contextualize them in care plans, observing the ethical commitment to zeal for the patients' life and dignity.

This editorial also alerts about risks associated with language models in the health area, even in Nursing. The "black box" nature of these systems hinders understanding how their responses are produced, with the possibility of leading to severe "hallucinations" in diagnoses and treatments.

The fast evolution of Large Language Models (LLMs) demands continuous validations, as each new version can render previous tests obsolete. In addition to that, human supervision remains indispensable for algorithm errors not to produce irreparable harms to the patients. Therefore, rigorous validation and continuous monitoring protocols should be strengthened[5,6].

Finally, it is essential for nurses to be offered constant training to leverage AI functionalities to the maximum possible, minimizing the risks of technology-related failures. Training courses, integration into academic curricula and periodic updates ensure that professionals keep their dexterity over the tools, know how to detect "hallucinations" and preserve scientific rigor.

In synthesis, AI reasserts nurses as leaders of truly people-centered care. Automating processes does not remove humanity from care; to the contrary, it expands the reach of qualified clinical reasoning, rendering assistance safer, more agile and more effective.

Technology is a means, not an end: when validated and supervised, its ethical use ensures that Nursing stays committed to its essence of caring and innovating.

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